

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 16 November 2000 (16.11.00)	
<b>International application No.</b> PCT/KR99/00131	<b>Applicant's or agent's file reference</b>
<b>International filing date</b> (day/month/year) 24 March 1999 (24.03.99)	<b>Priority date</b> (day/month/year)
<b>Applicant</b> LEE, Se, Young et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 20 October 2000 (20.10.00)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b> Juan Cruz Telephone No.: (41-22) 338.83.38
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# PATIENT COOPERATION TREATY

**PCT**

## NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

CHOI, Hak, Hyun & HWANG, Ju Myung  
Daekyung Building 120, 2-ka  
9th floor  
Taepyung-ro  
Chung-ku  
Seoul 100-724  
RÉPUBLIQUE DE CORÉE

<b>Date of mailing (day/month/year)</b> 21 November 2000 (21.11.00)	
<b>Applicant's or agent's file reference</b>	<b>IMPORTANT NOTIFICATION</b>
<b>International application No.</b> PCT/KR99/00131	<b>International filing date (day/month/year)</b> 24 March 1999 (24.03.99)

1. The following indications appeared on record concerning:

☐ the applicant
 ☐ the inventor
 ☒ the agent
 ☐ the common representative

<b>Name and Address</b> CHOI, Hak, Hyun Peeres Building, 222, 3-ka 6th floor Chungjung-ro Seodaemun-ku Seoul 120-013 Republic of Korea	<b>State of Nationality</b>	<b>State of Residence</b>
	<b>Telephone No.</b> 02 365 2727	
	<b>Facsimile No.</b> 02 365 3369	
	<b>Teleprinter No.</b>	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person
 ☐ the name
 ☒ the address
 ☐ the nationality
 ☐ the residence

<b>Name and Address</b> CHOI, Hak, Hyun & HWANG, Ju Myung Daekyung Building 120, 2-ka 9th floor Taepyung-ro Chung-ku Seoul 100-724 Republic of Korea	<b>State of Nationality</b>	<b>State of Residence</b>
	<b>Telephone No.</b>	
	<b>Facsimile No.</b>	
	<b>Teleprinter No.</b>	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b>  Lazar Joseph Panakal  Telephone No.: (41-22) 338.83.38
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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>C12N 9/90, 15/61, 1/21 // (C12N 9/90, C12R 1:38)</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/56868</b> <b>(43) International Publication Date:</b> 28 September 2000 (28.09.00)
<b>(21) International Application Number:</b> PCT/KR99/00131 <b>(22) International Filing Date:</b> 24 March 1999 (24.03.99) <b>(71) Applicant (for all designated States except US):</b> CHEIL JEDANG CORPORATION [KR/KR]; 500, 5-ga, Namdaemun-ro, Chung-ku, Seoul 100-095 (KR). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> LEE, Se, Young [KR/KR]; 847-31 Bangbae 1-dong, Seocho-ku, Seoul 137-061 (KR). SONG, Eun, Kyung [KR/KR]; Hansolmaeul LG, Apt. #201-1202, Jeongja-dong, Bundang-ku, Sungnam, Kyung-kee-do 463-010 (KR). PARK, Yearn, Hung [KR/KR]; 5/1 1122-9, Sangkye 1-dong, Nowon-ku, Seoul 139-201 (KR). KWON, Sang, Ho [KR/KR]; Pulunmaeul Ssangryoong, Apt. #509-1305, Sunae-dong, Bundang-ku, Sungnam, Kyungkee-do 463-020 (KR). LEE, Kwang, Ho [KR/KR]; 1026-50, Sadang 1-dong, Dongjak-ku, Seoul 156-091 (KR). KIM, Chang, Gyeom [KR/KR]; Galak Apt. #119-202, Galak-dong, Songpa-ku, Seoul 138-160 (KR). LEE, Jin, Ho [KR/KR]; Hyundae Apt. #104-1504, Pungdokchunly 700-1, Sujieub, Yoongin, Kyungkee-do 449-840 (KR). CHUNG, Sung, Oh [KR/KR]; Kumho Apt. #201-103, Hokye-dong, Dongan-ku, Anyang, Kyung-kee-do 431-080 (KR). JEON, Yeong, Joong [KR/KR];		Jukong Apt. #912-705, Myungil-dong, Kangdong-ku, Seoul 134-070 (KR). <b>(74) Agents:</b> CHOI, Hak, Hyun et al.; Peeres Building, 222, 3-ka, 6th floor, Chungjung-ro, Seodaemun-ku, Seoul 120-013 (KR). <b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). <b>Published</b> <i>With international search report.</i> <i>With an indication in relation to deposited biological material furnished under Rule 13bis separately from the description.</i>
<b>(54) Title:</b> TREHALOSE SYNTHASE PROTEIN, GENE, PLASMIDS, MICROORGANISMS, AND A PROCESS FOR PRODUCING TREHALOSE		
<b>(57) Abstract</b> <p>The present invention relates to a trehalose-producing microorganism and a process for producing trehalose. It also relates to a novel trehalose synthase protein, a trehalose synthase gene, recombinant plasmids carrying said trehalose synthase gene, and transformed microorganisms with said recombinant plasmids.</p>		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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EE	Estonia	LR	Liberia	SG	Singapore		

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 99/00131

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>7</sup>: C12N 9/90, 15/61, 1/21 // (C12N 9/90, C12R 1:38)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup>: C12N 9/90, 15/61, 1/21

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ, CAS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 704531 A2 (Kabushiki Kaisha Hajashibara Seibutsu Kagaku Kenkyujo), 03 April 1996 (03.04.96), claims 1,9,16,22,23,29-31.	1-3,5,7,8
A	EP 636693 A2 (Kabushiki Kaisha Hajashibara Seibutsu Kagaku Kenkyujo), 01 February 1995 (01.02.95), experiments 8,9,21,22.	1,7-9
A	JP 09-098779A (Fuji Seito KK) 15 April 1997 (15.04.97) (abstract) [online] [retrieved on 1999-12-03] Retrieved from: EPOQUE.	1,7,8
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☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

### \* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

03 December 1999 (03.12.99)

Date of mailing of the international search report

04 February 2000 (04.02.00)

Name and mailing address of the ISA/AT  
Austrian Patent Office  
Kohlmarkt 8-10; A-1014 Vienna  
Facsimile No. 1/53424/200

Authorized officer

Mosser

Telephone No. 1/53424/437

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 99/00131

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
EP	A2	704531	03-04-1996	AU	A1	32975/95	18-04-1996
EP	A3	704531	29-01-1997	AU	B2	692298	04-06-1998
				CA	AA	2159551	02-04-1996
				IL	A0	115443	31-01-1996
				JP	A2	8149980	11-06-1996
				US	A	5773282	30-06-1998
EP	A2	636693	01-02-1995	AU	A1	67569/94	02-02-1995
EP	A3	636693	29-01-1997	AU	B2	676326	06-03-1997
				CA	AA	2128372	21-01-1995
				CN	A	1106065	02-08-1995
				IL	A0	110334	21-10-1994
				IL	A0	120221	10-06-1997
				IL	A0	121945	10-03-1998
				IL	A1	120221	06-12-1998
				IL	A1	110334	27-12-1998
				JP	A2	7170977	11-07-1995
				US	A	5538883	23-07-1996
				US	A	5736380	07-04-1998
				US	A	5965411	12-10-1999
JP	A2	9098779	15-04-1997	none			

PCT

REQUEST

COPY

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

**Box No. I TITLE OF INVENTION** TREHALOSE SYNTHASE PROTEIN, GENE, PLASMIDS, MICROORGANISMS, AND A PROCESS FOR PRODUCING TREHALOSE

**Box No. II APPLICANT**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

Cheil Jedang Corporation  
500, 5-ga, Namdaemun-ro, Chung-ku,  
Seoul 100-095  
Republic of Korea

☐ This person is also inventor.

Telephone No. (02)7268-284

Facsimile No. (02)7268-219

Teleprinter No.

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States

☒ all designated States except the United States of America

☐ the United States of America only

☐ the States indicated in the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

LEE, Se Yong  
847-31 Bangbae 1-dong, Seocho-ku, Seoul 137-061  
Republic of Korea

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

CHOI, Hak Hyun and HWANG, Ju Myung  
6th Floor, Peeres Building, 222, 3-ka,  
Chungjung-ro, Seodaemun-ku, Seoul 120-013  
Republic of Korea

Telephone No.

(02)365-2727

Facsimile No.

(02)365-3369

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

*If none of the following sub-boxes is used, this sheet should not be included in the request.*

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SONG, Eun Kyung  
Hansolmaeul LG Apt. #201-1202, Jeongja-dong,  
Bundang-ku, Sungnam, Kyungkee-do 463-010  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PARK, Yearn Hung  
5/1 1122-9, Sangkye 1-dong, Nowon-ku, Seoul 139-201  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

KWON, Sang Ho  
Pulunmaeul Ssangryong Apt. #509-1305, Sunae-dong,  
Bundang-ku, Sungnam, Kyungkee-do 463-020  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

LEE, Kwang Ho  
1026-50, Sadang 1-dong, Dongjak-ku, Seoul 156-091  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on another continuation sheet.



## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

KIM, Chang Gyeom  
Galak Apt. #119-202, Galak-dong, Songpa-ku, Seoul 138-160  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

LEE, Jin Ho  
Hyundae Apt. #104-1504, Pungdokchunly 700-1,  
Sujieub, Yoongin, Kyungkee-do 449-840  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CHUNG, Sung Oh  
Kumho Apt. #201-103, Hokyedong, Dongan-ku,  
Anyang, Kyungkee-do 431-080  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

JEON, Yeong Joong  
Jukong Apt. #912-705, Myungil-dong,  
Kangdong-ku, Seoul 134-070  
Republic of Korea

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

KR

State (that is, country) of residence:

KR

This person is applicant for the purposes of:

☐ all designated States☐ all designated States except the United States of America☒ the United States of America only☐ the States indicated in the Supplemental Box☒

Further applicants and/or (further) inventors are indicated on another continuation sheet.

## Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

## Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
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- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

## National Patent (if other kind of protection or treatment desired, specify on dotted line):

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| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MG Madagascar                                |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BG Bulgaria                              |  |
| <input checked="" type="checkbox"/> BR Brazil                                | <input checked="" type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MW Malawi                                    |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MX Mexico                                    |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> NO Norway                                    |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NZ New Zealand                               |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PL Poland                                    |
| <input checked="" type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> PT Portugal                                  |
| <input checked="" type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RO Romania                                   |
| <input checked="" type="checkbox"/> DK Denmark                               | <input checked="" type="checkbox"/> RU Russian Federation                        |
| <input checked="" type="checkbox"/> EE Estonia                               | <input checked="" type="checkbox"/> SD Sudan                                     |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SE Sweden                                    |
| <input checked="" type="checkbox"/> FI Finland                               | <input checked="" type="checkbox"/> SG Singapore                                 |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SI Slovenia                                  |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> SK Slovakia                                  |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> SL Sierra Leone                              |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TJ Tajikistan                                |
| <input type="checkbox"/> GW Guinea-Bissau                                    | <input checked="" type="checkbox"/> TM Turkmenistan                              |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TR Turkey                                    |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IS Iceland                               | <input checked="" type="checkbox"/> US United States of America                  |
| <input checked="" type="checkbox"/> JP Japan                                 |  |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> VN Viet Nam                                  |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> YU Yugoslavia                                |
|  | <input checked="" type="checkbox"/> ZW Zimbabwe                                  |
| <input checked="" type="checkbox"/> KR Republic of Korea                     |  |
| <input checked="" type="checkbox"/> KZ Kazakhstan                            |  |
| <input checked="" type="checkbox"/> LC Saint Lucia                           |  |
| <input checked="" type="checkbox"/> LK Sri Lanka                             |  |
| <input checked="" type="checkbox"/> LR Liberia                               |  |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☐ .....  
☐ .....

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1)				
item (2)				
item (3)				

☐ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office)* identified above as item(s):

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(iii)). See Supplemental Box.

## Box No. VII INTERNATIONAL SEARCHING AUTHORITY

**Choice of International Searching Authority (ISA)**  
(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

**Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):**

Date (day/month/year)

Number

Country (or regional Office)

ISA / AT

**Box No. VIII CHECK LIST; LANGUAGE OF FILING**

**This international application contains  
the following number of sheets:**

request : 5

description (excluding  
sequence listing part) : 22

claims : 7

abstract : 1

drawings	:	6
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sequence listing part

of description : 6

**Total number of sheets :** 47

**This international application is accompanied by the item(s) marked below:**

1. ☐ fee calculation sheet
2. ☒ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☒ separate indications concerning deposited microorganism or other biological material
8. ☒ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other (specify):

**Figure of the drawings which should accompany the abstract:**

**Language of filing of the international application:** English

**B x No. IX      SIGNATURE OF APPLICANT OR AGENT**

*Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).*

CHOI, Hak Hyun

HWANG, Ju Myung

For receiving Office use only	
1. Date of actual receipt of the purported international application:	2. Drawings:  <input type="checkbox"/> received:  <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): ISA / AT	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

Date of receipt of the record copy  
by the International Bureau:

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR 99/00131</b>	International filing date ( <i>day/month/year</i> ) <b>24 March 1999 (24.03.1999)</b>	Priority Date ( <i>day/month/year</i> )
International Patent Classification (IPC) or national classification and IPC  <b>IPC<sup>7</sup>: C12N 9/90, 15/61, 1/21 // (C12N 9/90, C12R 1:38)</b>		
Applicant <b>Cheil Jedang Corporation et al.</b>		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examination Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>  3  </u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>                    </u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I.      <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II.     <input type="checkbox"/> Priority</li> <li>III.    <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV.    <input type="checkbox"/> Lack of unity of invention</li> <li>V.     <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI.    <input type="checkbox"/> Certain documents cited</li> <li>VII.   <input type="checkbox"/> Certain defects in the international application</li> <li>VIII. <input type="checkbox"/> Certain observations on the international application</li> </ul>		
Date of submission of the demand  <b>20 October 2000 (20.10.2000)</b>	Date of completion of this report  <b>14 November 2000 (14.11.2000)</b>	
Name and mailing address of the IPEA/AT Austrian Patent Office Kohlmarkt 8-10 A-1014 Vienna Facsimile No. 1/53424/200	Authorized officer  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">MOSSER</div> Telephone No. 1/53424/437	

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

I International application No.  
PCT/KR 99/00131

## I. Basis of the report

1. With regard to the elements of the international application: \*
    - ☒ the international application as originally filed
    - ☐ the description:
      - pages \_\_\_\_\_, as originally filed
      - pages \_\_\_\_\_, filed with the demand
      - pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
    - ☐ the claims:
      - pages \_\_\_\_\_, as originally filed
      - pages \_\_\_\_\_, as amended (together with any statement) under Article 19
      - pages \_\_\_\_\_, filed with the demand
      - pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
    - ☐ the drawings:
      - pages \_\_\_\_\_, as originally filed
      - pages \_\_\_\_\_, filed with the demand
      - pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
    - ☐ the sequence listing part of the description:
      - pages \_\_\_\_\_, as originally filed
      - pages \_\_\_\_\_, filed with the demand
      - pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
  2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:
    - ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
    - ☐ the language of publication of the international application (under Rule 48.3(b)).
    - ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
  3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
    - ☐ contained in the international application in printed form.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority in written form.
    - ☐ furnished subsequently to this Authority in computer readable form.
    - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
    - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
  4. ☐ The amendments have resulted in the cancellation of:
    - ☐ the description, pages \_\_\_\_\_
    - ☐ the claims, Nos. \_\_\_\_\_
    - ☐ the drawings, sheets/fig \_\_\_\_\_
  5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)). \*\*
- \* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as „originally filed“ and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).
- \*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/KR 99/00131

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement			
Novelty (N)	Claims	1-9	YES
	Claims		NO
Inventive step (IS)	Claims	1-9	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO

### Citations and explanations (Rule 70.7)

The documents cited in the search report are merely interesting contributions to the state of the art and do not interfere with novelty and inventive step of the subject matter of the present claims 1-9.

The industrial applicability is obvious.



BUDAPEST TREATY ON THE INTERNATIONAL  
RECOGNITION OF THE DEPOSIT OF MICROORGANISMS  
FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

To. CHEILJEDANG Corporation

12F, CHEILJEDANG BLDG,  
500, 5GA NAMDAEMOON-NO,  
CHUNG-KU, SEOUL,  
100-095, KOREA

RECEIPT IN THE CASE OF AN ORIGINAL  
issued pursuant to Rule 7.1 by the  
INTERNATIONAL DEPOSITARY AUTHORITY  
identified at the bottom of this page

I. IDENTIFICATION OF THE MICROORGANISM	
Identification reference given by the DEPOSITOR : Pseudomonas stutzeri CJ38	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY : KCCM - 10150
II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION	
<p>The microorganism identified under I above was accompanied by:</p> <p><input type="checkbox"/> a scientific description</p> <p><input type="checkbox"/> a proposed taxonomic designation</p> <p>(Mark with a cross where applicable)</p>	
III. RECEIPT AND ACCEPTANCE	
<p>the microorganism identified under I above was received by this international Depositary Authority on Sep. 29, 1997 and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on Feb. 12, 1999.</p>	
IV. INTERNATIONAL DEPOSITARY AUTHORITY	
Name: Korean Culture Center of Microorganisms  Address: Department of Food Engineering College of Eng. Yonsei University Sodaemun-gu, Seoul 120-749 Korea	Signature(s) of person(s) having the power to represent the International Depositary Authority or of authorized official(s)  Date: Feb. 25 . 1999